



IGSMiE

PAN

**Mineral and Energy
Economy Research Institute**
Polish Academy of Sciences

Management board of the Institute



Krzysztof Galos

D. Sc., Eng., Associate Professor,
Director of the Institute

Lidia Gawlik

D. Sc. Eng., Associate Professor,
Deputy Director for Research



Michał Kopacz

D. Sc. Eng., Associate Professor,
Deputy Director for General Affairs



OVER

30

YEARS OF ACTIVITY

MORE THAN

110

EMPLOYEES,
INCLUDING ABOUT
50 PERSONS OF
SCIENTIFIC STAFF



60

APPROXIMATELY



150

SCIENTIFIC PUBLICATIONS
PER YEAR, AND ABOUT
30 AT LIST A

50



INCLUDING COOPERATION
WITH SEVERAL FOREIGN
AND OVER 30 DOMESTIC
RESEARCH UNITS

HIGH ACADEMIC STANDING
OF THE INSTITUTE
(CATEGORY A IN
A PARAMETRIC EVALUATION
OF SCIENTIFIC UNITS)

A

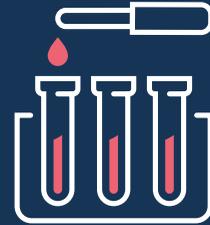
THE INSTITUTE'S
SCIENTIFIC

4

DEPARTMENTS,
CONSISTING
OF SEVERAL DIVISIONS



90



RESEARCH PROJECTS
CARRIED OUT EACH
YEAR, INCLUDING 5-15
INTERNATIONAL PROJECTS

THE INSTITUTE CARRIES OUT
RESEARCH FOR MORE THAN

100

BUSINESSES IN POLAND
AND ABROAD





From tradition to modernity

The history of the Mineral and Energy Economy Institute, Polish Academy of Sciences (MEERI PAS) dates back to the 1980s.

In 1986, the Department of Basic Research on Mineral Management was founded, transformed two years later into the Centre for Fundamental Problems of Mineral and Energy Management of the Polish Academy of Sciences.

From 1986 to 2004, the Director of the Institute was Prof. Roman Ney; from 2005 to 2016, it was Prof. Eugeniusz Mokrzycki and, since 2017, it has been Ass. Prof. Krzysztof Galos.

At present, the Institute is an important research and development institution, contributing to scientific and research progress in the field of mineral and energy management, in Poland and abroad. In the last parametric evaluation of scientific units, the Institute was awarded the "A" category.

It is worth mentioning that the Institute also houses three laboratories:

- **Geothermal Laboratory in Bańska Niżna-Biały Dunajec,**
- **Laboratory of Engineering Geophysics,**
- **Environmental Research Laboratory.**

1986

The Department of Basic Research on Mineral Management of the Polish Academy of Sciences

1988

The Centre for Fundamental Problems of Mineral and Energy Management of the Polish Academy of Sciences

1998

Mineral and Energy Economy Research Institute, Polish Academy of Sciences

2016

30 years' anniversary of the Institute foundation



MISSION

The mission of the Institute is to provide modern, economically viable, environmentally friendly and socially attractive scientific solutions for the sustainable development of the country and its regions in the field of minerals and energy.

This mission is implemented under the motto:

**MINERALS AND ENERGY
FOR SOCIETY**



This is delivered through rationally designed actions and interrelated research, as well as organizational, technical and economic activities, in the following areas:

**RESOURCES - TECHNOLOGIES
- ECONOMICS
- MARKET - ENVIRONMENT**



In a scientific triangle:

**RESEARCH - INNOVATION
- EDUCATION**





Diamonds of the Institute

The most valuable capital of the Institute is its employees, whose number currently exceeds 110.

The scientific personnel includes:

- 6 Professors,
- 12 Associate Professors,
- 11 Adjunct researchers,
- 22 Assistant researchers.

The other employees provide scientific, technical and administrative support to the scientific staff. Very high expertise of our employees is supplemented by many years of experience in the implementation of research and development.

The substantive competence of our employees is systematically developed in the course of applied research, research and development, training and through active contacts with entrepreneurs, inscribed in the specifics of the activity of our Institute.



Professors



Habilitated doctors
D.Sc.



Doctors
Ph.D.



Master's degrees
M.Sc.



Others

Minerals and energy for society

The research carried out at the Institute are characterized by **interdisciplinarity and their complex character. They cover a full cycle of R&D processes - from basic research to application, with a particular emphasis on their usefulness.**

The interdisciplinary nature of the Institute's activities includes in particular such scientific areas as:

- **Mining,**
- **Geology and geoengineering,**
- **Power engineering, including renewable and geothermal energy,**
- **Environmental engineering,**
- **Geophysics and applied geophysics**

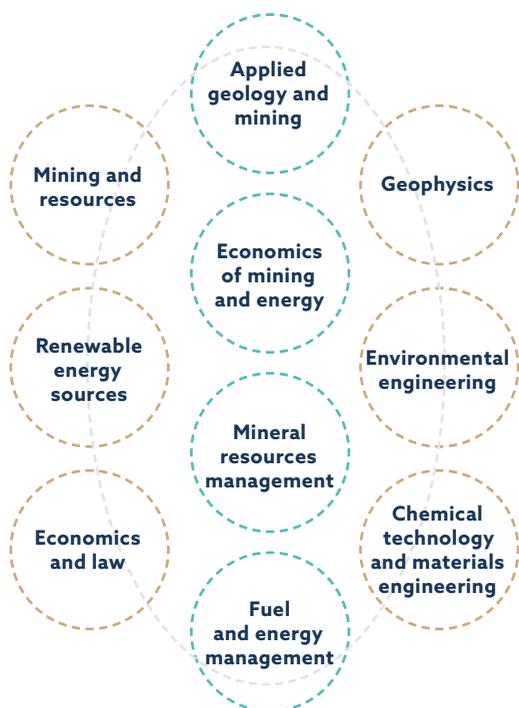
and issues related to: economics, law, chemical technology, process engineering, materials engineering and cartography.

The scientific profile of the Institute includes the broadly understood issues of mineral and energy management, starting with the forecasting, identification and exploration of mineral deposits, through their development and the acquisition of raw materials, and ending with processing, enrichment and recovery processes. Research and development activities include also different aspects of the strategy development and assessment of the domestic mineral and energy management, taking into account the newest technological developments and

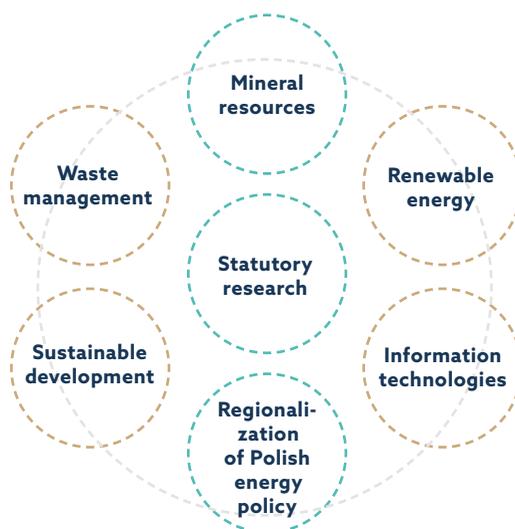
market, environmental, social and legal conditions. The current scope of statutory research covers six basic thematic areas, as shown in the diagram.

The Institute specializes in basic studies and applied research in the field of geothermal energy. It is worth emphasizing that our employees pioneered the use of geothermal energy for heating. Within the framework of the Institute's activities, the first Polish experimental geothermal plant in Bańska-Biały Dunajec was launched in 1993. As of today, this installation is also used as a geothermal laboratory.

FIELDS OF EXPERTISE FOR R&D



THE SCOPE OF SCIENTIFIC RESEARCH



Excellence in science and Integrated Management System (ISO)

Focusing on the scientific development of the employees is a key element in many of the initiatives implemented by our Institute, that aim to bridge the generational gaps and support the development of our researches.

In the field of scientific excellence, the Institute implements supportive actions:



Recruitment of young researchers



Supporting the completion of doctoral and postdoctoral dissertations



Promoting extraordinary publications

It is worth emphasizing that persons under the age of 40 make up about 40% of the total number of employees.

The quality and the scientific level of our employees are verified by the internal staff appraisal system, which promotes self-development within a specific career path. It is also worth mentioning that, for several years, the Institute has also been a member of the **Euraxess Researchers in Motion** network, thus supporting researcher mobility and dissemination of knowledge in Europe.

The efforts of our Institute were recognized by the European Commission, which, after analysing our overall personnel policy, and as a result of the implementation of the Commission's guidelines

contained in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, awarded us the prestigious **HR Excellence in Research** in 2017, confirming the highest quality of science and HR policy in our Institute.



HR EXCELLENCE IN RESEARCH



EURAXESS
RESEARCHERS IN MOTION

YOUNG PEOPLE IN SCIENCE

Within the framework of cooperation with universities, the Institute is involved in the organization of scientific internships and placements, providing development opportunities for future researchers. Every year, the Institute is visited by several students, including those pursuing a Ph.D., also from abroad who wish to develop their academic interests. The best of them are given the opportunity to work in our unit.

INTEGRATED MANAGEMENT SYSTEM (ISO)

To offer the best quality of our services and with respect to natural environment, the Institute has implemented and maintains an Integrated Quality and Environmental Management System compliant with the requirements of ISO 9001: 2015 and ISO 14001: 2015. The scope of certification

includes accomplishment of scientific researches, R&D and laboratory services, promotion and dissemination of scientific knowledge.

The policy of the Integrated Management System is an integral part of the Strategy of our Institute.



Scientific achievements in numbers

In the course of over 30 years of activity, the Institute has systematically built up its reputation as an important centre, shaping scientific progress in the area of its main activity in both Poland and abroad.

We are satisfied that the number of scientific publications in the period of 2013-2018, published by our employees was growing. In mentioned time it exceeded 1000, with an average of almost 150 publications per year.

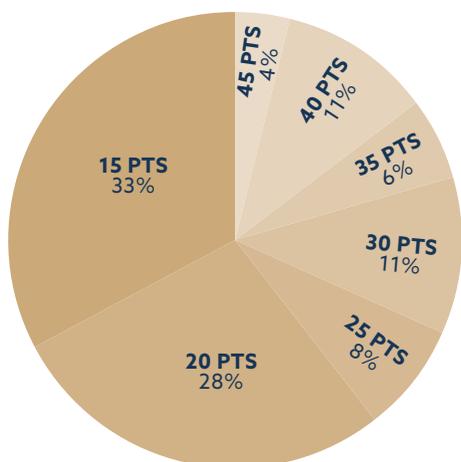
The number of publication placed in the List A of Ministry of Science and Higher Education, which are the most appreciated globally, has also upward trend. In 2017, 45 articles were published in journals from the List A.

40% of them are publications with more than 25 points following actual reporting standards. The number of monographs and chapters in books published in both Polish and English is also significant (on average 50 of them every year).

Statistics of publications of MEERI PAS employees in 2013-2018

ITEM	TOTAL	MEAN VALUE
PUBLICATIONS (LIST A)	171	29
PUBLICATIONS (LIST B)	433	73
MONOGRAPHS	88	15
CHAPTERS IN MONOGRAPHS	211	36
OTHER PUBLICATIONS	106	18

Statistics of publications at the List A according to points awarded by the Ministry of Science and Higher Education in 2013-2018



Publications of MEERI PAS employees in 2013-2017

2017				
LIST A	LIST B	MONO-GRAPHS	CHAPTERS IN MONO-GRAPHS	OTHER PUBLICATIONS
45	63	14	42	23
2013				
22	73	19	44	12

Number of publications of MEERI PAS employees in journals at the List A in 2013-2017



Dissemination of science

The Institute has its own publishing house, that issues scientific journals, monographs and book series.

Gospodarka Surowcami Mineralnymi - Mineral Resources Management is indexed in the **Web of Science** and the **Scopus** repositories. In recent years the **Impact Factor** of this journal oscillated between **0.4** and **0.6**.

A valuable offer for Polish and foreign scientists are also our other journals, such as:

- **Polityka Energetyczna - Energy Policy Journal,**
- **Zeszyty Naukowe IGSMiE PAN - Bulletin of the MEERI PAS,**
- **Technika Poszukiwań Geologicznych, Geotermia, Zrównoważony Rozwój - Geological Exploration,**
- **Technology, Geothermal Energy, Sustainable Development.**

Since its foundation, the publishing house has developed and published its own publishing book series, including *Studia Rozprawy Monografie - Studies, Dissertations and Monographs* (over 200 volumes since 1988) and *Surowce Mineralne Polski - Mineral Raw Materials of Poland* (12 volumes since 1996). In addition, the publishing house distributes monographs (scientific publications of the employees of the Institute and, to a lesser extent, employees of universities and other research institutes).

The published articles are available in an open repository under the Creative Commons Attribution CC BY-SA 4.0 license.

It is also worth mentioning that since 2019, for our key journals, we have implemented professional tools that enhance management and publishing process with DOI standard, as well as easy bibliography search.

These tools are available on the website of our publishing house at the: <https://min-pan.krakow.pl/wydawnictwo/czasopisma/>.



Domestic and foreign cooperation

Over the last few years, our institution has carried out several hundred research and development projects,

including:

- international projects,
- domestic R&D projects,
- research services for Polish business entities,
- studies for governmental units and regional and local authorities.

The Institute receives funds from public and private sources by participating in the European Union Framework Programmes, using structural funds, grants and corporate funds. In recent years, the Institute has participated in about 50 international projects implemented through the combined efforts of science and industry.

Several of them were co-funded by the European Union and carried out by international consortia. Participation in international consortia creates a space for building and strengthening relationships with foreign partners and enables the transfer of knowledge and experience.



Cooperation with business entities is very important for the functioning of the Institute. The MEERI PAS is involved in the implementation of 50-70 research and development projects for business entities each year. The Institute's employees very often participated in the implementation of their ideas, solutions and tools in mining and energy companies.

Moreover, in the framework of cooperation with governmental and local authorities units, we implement nearly 20 projects every year. The Institute's portfolio is also enriched by several patents granted by the Patent Office of the Republic of Poland and the World Intellectual Property Organization.

We cooperate with both domestic and foreign scientific units, like from Germany, Ireland, the United Kingdom, Belgium, Spain,

Portugal, France, Denmark, Sweden, Norway, Finland, Greece, Hungary, South Africa or the United States.

Our industrial partners represent the major companies in the mining, mineral and energy sectors, as well as state offices and institutions, and the largest consulting companies. Our relationship with these entities is often confirmed by letters of intent and cooperation agreements.



At the crossroads of science and industry

Organizing and participating in congresses and conferences have been regular features of the Institute's activities for many years. Our employees are involved in the organization of occasional international congresses and conferences and numerous national initiatives.

The most important of these are:

- **World Mining Congress,**
- **Polish Mining Congress,**
- **Polish Geothermal Congress,**
- **International Mining Forum.**

The Institute also organizes regular conferences:

- **Since 1979: Zagadnienia Surowców Energetycznych i Energii w Gospodarce Krajowej (Issues of Fuels and Energy in the Domestic Economy),**
- **Since 1990: Aktualia i Perspektywy Gospodarki Surowcami Mineralnymi (Topicalities and Perspectives of Minerals Management),**
- **Since 1992: Szkoła Eksploatacji Podziemnej (School of Underground Mining),**
- **Since 1997: Warsztaty Górnicze - Zagrożenia Naturalne w Górnictwie (Mining Workshop - Natural Hazards in Mining),**
- **Since 2018: Forum Gospodarki Energetycznej (The Energy Economy Conference).**

Occasionally, conferences on environmental issues, mineral resources and waste management, recycling, circular and the low-carbon economy are organized.

In the recent years, the Institute was also a co-organizer of international conferences devoted to the issues of applied geophysics, coal products and technologies related to the coal processing, zeolites or geothermal energy.

Conference materials, both in printed and electronic formats, are also available on conference websites, providing a valuable source of information.

Towards the future

The Institute's Mission is to continually develop our employees. We strive to make our institution a workplace where ethical values are respected. Our actions are aimed at increasing the scientific prestige of the Institute in both national and international research arenas.

We intend to pursue this mainly through:

- Creating favourable conditions for the development of scientific interests and knowledge transfer for all our employees,
- Cultivating and promoting ethical behaviour when performing scientific activities and creating a forum for the free exchange of ideas,
- Facilitating cooperation with other scientific institutions on research projects at a national and European level, in particular, in the field of innovative research on the broadly understood management of minerals and energy,
- Developing relationships with other scientific institutions and industry in the country and abroad through the joint implementation of research and development projects,
- Developing existing laboratory equipment and associated research and development services in the fields in which the Institute specializes,
- Constantly increasing the number of academic staff of the Institute, adjusted to ongoing and planned directions of research,
- Expanding the importance and prestige of journals published by the Institute in the international arena,
- Conducting systematic research and developing databases using modern information technologies,
- Disseminating scientific achievements and knowledge through the organization of conferences (especially cyclical) and the publication of dedicated, publicly available reports,
- Promoting educational activities by launching postgraduate and Ph. D. programmes in the scientific disciplines covered by the Institute.





Together, we can do more

The Institute is particularly interested in facilitating cooperation with academic institutions and enterprises through the implementation of joint projects.

We want to be optimistic about the future and build lasting relationships, based on the knowledge and experience of our employees.

The invitation to cooperate with the Institute is particularly addressed to:

- **Entrepreneurs associated with broadly understood mining, energy and environmental engineering,**
- **Universities and other research and development institutions,**
- **Young scientific workers, Ph. D. students and students from technical universities who are thinking about their own scientific development,**
- **Anyone else interested in mutual and fruitful cooperation.**

Thanks to constantly developing competences among our employees, the Institute can offer knowledge and skills in the field of the mineral and energy economy, sustainable development, resource and energy security in Poland, and waste management.

The Institute continues to develop competences in:

- Methods of forecasting, prospecting, identifying, exploring and classifying mineral deposits, their protection and rational management,
- Renewable energy sources, in particular, geothermal, hybrid and biomass sources,
- Geophysical studies on the assessment of the structure and properties of soil and rock mass,
- Minerals and energy policy,
- Methods for optimizing the management of the deposits, exploitation, enrichment and processing of minerals,
- The valuation of investment projects in the mining, fuel and energy sectors,
- The assessment of the formal, legal, technical, technological and environmental conditions of mineral resources acquisition,
- Research and forecasts of mineral and energy markets,
- The development of energy economy models, optimization using mathematical methods, and the assessment of the impact of national and international regulations on the fuel and energy sector,
- Life cycle analyses and environmental impact assessments,
- Recycling of scrap and waste materials,
- The assessment of the potential use of waste mineral raw materials and accompanying minerals,
- Utilisation and reuse of substances using zeolites,
- The assessment of the quality of the soil-water environment.



**If you would like to cooperate with us,
please visit our website:
www.min-pan.krakow.pl**

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Polish Academy of Sciences

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HR EXCELLENCE IN RESEARCH



ISO 14001

LL-C (Certification)



ISO 9001

LL-C (Certification)



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